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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,965	11/21/2001	Xiang Liu	4-4-8	3316

7590 06/28/2005

Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER

LEE, DAVID J

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,965

Applicant(s)

LIU ET AL.

Examiner

David Lee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 7-9, 15, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ito (US Patent No. 6,650,846 B1).

Regarding claims 1 and 9, Ito teaches a transmitter for use in an optical communication system, said transmitter (fig. 14) comprising means for generating a stream of RZ optical pulses (Abstract, lines 7-9) in which alternate ones of such pulses have essentially orthogonal polarizations (col. 7, lines 13-21), and means for modulating the phase (2 of fig. 14) of said optical pulses as a function of input data applied to said transmitter to encode said input data onto said stream of RZ optical pulses (phase is modulated based on input data).

Regarding claims 7 and 15, Ito teaches an optical communication system, said system comprising: a transmitter for use in an optical communication system, said transmitter (fig. 14) comprising means for generating a stream of RZ optical pulses (Abstract, lines 7-9) in which alternate ones of such pulses have essentially orthogonal polarizations (col. 7, lines 13-21), and means for modulating the phase (2 of fig. 14) of

said optical pulses as a function of input data applied to said transmitter to encode said input data onto said stream of RZ optical pulses (phase is modulated based on input data); and an optical communication channel for transmitting the modulated optical pulses from said transmitter to a remote receiver (fig. 4).

Regarding claims 8 and 16, Ito teaches a demodulator for recovering at least one stream of input data from the modulated optical pulses received a remote receiver (400 of fig. 4).

3. Claims 4, 6, 12, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Farries et al. (US Patent No. 6,819,872 B2).

Regarding claims 4 and 12, Farries teaches a transmitter for use in an optical communication system (fig. 2), said transmitter comprising means for generating first and second streams of RZ optical pulses in which pulses in said first stream have essentially orthogonal polarizations with respect to pulses in said second stream (col. 2, lines 4-10), and means for modulating the phase of said RZ optical pulses in said first and second streams as a function of first and second streams of input data applied to said transmitter, respectively, to encode said first and second streams of input data onto said first and second streams of optical pulses, respectively (col. 2, lines 19-29).

Regarding claims 6 and 14, Farries teaches that the optical pulses are solitons (col. 2, line 13).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito in view of Price et al. (US Patent No. 6,522,439 B2).

Regarding claims 2 and 10, Ito teaches the limitations as applied to claim 1 but does not specifically disclose that the modulating means is a PSK modulator. However, PSK modulation is a modulation scheme well known in the art of data encoding and is one of a plurality of modulation formats available to an artisan. For example, Price teaches an optical transmitter utilizing a PSK modulator (col. 2, lines 14-16). One of ordinary skill in the art would have been motivated to use a PSK modulation scheme in order to achieve a healthier transmission quality. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use PSK modulation in the system of Ito.

Regarding claims 3 and 11, Ito teaches the limitations as applied to claim 1 but does not specifically disclose that the modulating means is arranged to modulate said optical pulses in accordance with the differences between successive bits in said input data. This modulation scheme, also known as differential phase shift key modulation (DPSK) is well known in the art and is one of a plurality of modulation formats available to an artisan. For example, Price teaches an optical transmitter utilizing DPSK

modulation (col. 8, lines 50-57). One of ordinary skill in the art would have been motivated to use a DPSK modulation scheme in order to achieve a healthier transmission quality. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use DPSK modulation in the system of Ito.

6. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farries.

Regarding claims 5 and 13, Farries teaches the limitations as applied to claims 4 and 12 including the limitation that the first and second streams of optical pulses each have the same first wavelength (both streams come from source 201 of fig. 2). Farries does not specifically disclose that the transmitter further includes a wavelength division multiplexer for combining the output of said modulation means with at least a second modulated optical signal having a wavelength different from said first wavelength. However, multiplexing modulated signals of different wavelengths is well known in the art. One of ordinary skill in the art would have been motivated to multiplex the two wavelengths together in order to increase transmission capacity. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a WDM in the transmitter of Farries.

Response to Arguments

7. Applicant's arguments with respect to claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

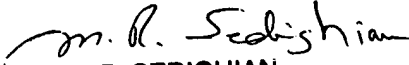
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lee whose telephone number is (571) 272-2220. The examiner can normally be reached on Monday - Friday, 9:00 am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DL


M. R. SEDIGHIAN
PRIMARY EXAMINER